REMARKS

Claims 1-17 have been examined. Claims 1-6 and 12-16 have been rejected. It is noted with appreciation that claims 7-11 and 17 have been allowed. The present amendment amends claims 9 and 12 and adds new claims 18-25. Accordingly, claims 1-25 are now pending. Reconsideration and allowance of all pending claims are respectfully requested.

Objection to the Specification

The Examiner has objected to an informality in the Specification at page 8 on line 13. The amendment corrects this informality, removing the basis for the objection.

Rejection Under 35 U.S.C. 102(b)

Claims 1-6 and 12-16 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,790,570 issued to Heegard, et al. Since these claims recite features neither disclosed nor suggested by the prior art, the rejection should be withdrawn.

The Heegard, et al. patent discloses a digital encoding system and decoding system that combines the use of block coding and trellis coding. Certain data is subject to both block coding and trellis coding while the other data either remains uncoded or uses a weaker block code. The data that is not subject to block coding or trellis coding is employed to designate a particular point within a cell of a trellis-coded modulation symbol constellation. This data is inherently less sensitive to error and thus can be left uncoded for efficiency.

Rejected independent claims 1, 6, and 12 are generally directed to a communication systems and methods in a digital communication system where multiple users share a transmission medium. Claims 1 and 6 are directed toward a transmitter system. Claim 12 is directed toward a method for transmitting. All of the rejected independent claims recite varying treatment of data relating to coordinating access to the transmission medium and data not relating to coordinating access. Specific examples of data relating to coordinating access include scheduling messages, access requests, etc. In certain embodiments, preferential treatment of this

data makes overall operation of the communication system more robust to channel impairments even when some payload data is lost.

By contrast, the Heegard, et al. patent is directed toward the operation of a particular coding system and makes no mention whatsoever of handling of data relating to coordinating access to a transmission medium. There is also no suggestion of such a feature. The failure of Heegard, et al. to disclose or suggest this feature argues very strongly against its relevance to independent claims 1, 6, and 12. These claims are therefore allowable over the art of record.

Claims 2-5 and 13-16 are allowable for at least the reason of their dependence from the allowable parent claims. There are further reasons for the allowability of these dependent claims. For example, claims 3 and 14 recite systems where that exploit two different trellis encoding schemes for different kinds of data. The Heegard, et al. reference does not disclose or suggest this feature.

Claims 18-25 are newly added, supported by the specification as originally filed, and allowable over the art of record.

Conclusion

For the foregoing reasons, Applicant believes all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 446-8694.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO THE APPLICATION

In the Specification

Page 8, please replace the third paragraph with the following:

--A MAC processor 302 originates MAC data. If transmitter system 300 is a part of central access point 104, the MAC data may include scheduling messages. If transmitter system **[302]** 300 is incorporated within one of subscriber units 102, the MAC data may include access requests. The MAC data is input to, e.g., a Reed-Solomon encoder 304. Reed-Solomon encoder 304 is a type of block coder and outputs s_l bits of data for every input r_l bits of input data. Since s_l is greater than r_l, Reed-Solomon encoder 304 introduces redundancy. A convolutional encoder 306 introduces further redundancy. For each k_l input bits, convolutional encoder 306 outputs n_l bits. A constellation mapper 308 assigns complex values to groups of input bits. The output of constellation mapper 308 is a series of such complex values, referred to as symbols. Each symbol represents a magnitude and phase of a carrier signal to be transmitted over the air.--

In the Claims

Please amend claims 9 & 12 as follows:

1. In a digital communication system employing a transmission medium shared among multiple users, a transmitter system comprising:

a first encoder that encodes data related to coordinating access to said transmission medium according to a first encoding scheme;

a second encoder that encodes data not related to coordinating access to said transmission medium according to a second encoding scheme; and

a control system that allocates transmission time between outputsof said first encoder and said second encoder; and

wherein said first encoding scheme introduces more redundancy than said second encoding scheme.

2. The transmitter system of claim 1 wherein said first encoding scheme and said second encoding scheme comprise convolutional encoding schemes and said first encoding scheme has a lower rate than said second encoding scheme.

3. The transmitter system of claim 1 wherein said first encoding scheme and said second encoding scheme comprise trellis encoding schemes and first encoding scheme has a lower rate than said second encoding scheme.

4. The transmitter system of claim 1 wherein said first encoding scheme and said second encoding scheme comprise block encoding schemes.

5. The transmitter system of claim 4 wherein said block encoding schemes comprise Reed-Solomon encoding schemes.

6. In a digital communication system employing a transmission medium shared among multiple users, a transmitter system comprising:

a first mapper that outputs complex symbol values falling on a first symbol constellation responsive to data relating to coordinating access to said transmission medium;

a second mapper that outputs complex symbol values falling on a second symbol constellation responsive to data not relating to coordinating access to said transmission medium; and

a control system that allocates transmission time between output of said first mapper and output of said second mapper; and

wherein complex symbol values of said first symbol constellation are spaced more widely than complex symbol values of said second symbol constellation.

7. In a digital communication system employing a transmission medium shared among multiple users, a receiver system comprising:

a first decoder that decodes data related to coordinating access to said transmission medium according to a first encoding scheme;

a second decoder that decodes data not related to coordinating access to said transmission medium according to a second encoding scheme; and

a control system that selects output of either said first decoder or said second decoder for reception; and

wherein said first encoding scheme introduces more redundancy than said second encoding scheme.

8. The receiver system of claim 7 wherein said first encoding scheme and said second encoding scheme comprise convolutional encoding schemes and said first encoding scheme has a lower rate than said second encoding scheme.

9. (AMENDED) The **[reciever]** receiver system of claim 7 wherein said first encoding scheme and said second encoding scheme comprise trellis encoding schemes and said first encoding scheme has a lower rate than said second encoding scheme.

10. The receiver system of claim 7 wherein said first encoding scheme and said second encoding scheme comprise block encoding schemes.

11. The receiver system of claim 7 wherein said block encoding schemes comprise Reed-Solomon encoding schemes.

12. (AMENDED) In a digital communication system employing a transmission medium shared among multiple users, a method for transmitting comprising:

encoding data related to coordinating access to said transmission medium according to a first encoding scheme;

encoding data not related to coordinating access to said transmission medium according to a second encoding scheme; and

transmitting responsive to output by either said first encoder or said second encoder; and

wherein said first encoding scheme introduces more redundancy than said second encoding scheme.

13. The method of claim 12 wherein said first encoding scheme and said second encoding scheme comprise convolutional encoding schemes and said first encoding scheme has a lower rate than said second encoding scheme.

14. The method of claim 12 wherein said first encoding scheme and said second encoding scheme comprise trellis encoding schemes and said first encoding scheme has a lower rate than said second encoding scheme.

15. The method of claim 12 wherein said first encoding scheme and said second encoding scheme comprise block encoding schemes.

16. The method of claim 15 wherein said block encoding schemes comprise Reed-Solomon encoding schemes.

17. In a digital communication system employing a common transmission medium, a method for controlling transmission comprising:

transforming data into a modulation signal, said data comprising data relating to controlling access to said common transmission medium and data not relating to controlling access to said common transmission medium; and

converting said modulation signal to an RF signal for transmission; and

wherein said transforming step applies greater protection against channel impairments to said data relating to controlling access to said common transmission medium.

Please add new claims 18-25 as follows:

--18. In a digital communication system employing a transmission system employed by multiple users, a method for receiving comprising:

decoding data related to coordinating access to said transmission medium according to a first encoding scheme;

decoding data related to coordinating access according to a second encoding scheme; and

selecting for reception between data decoded according to said first encoding scheme and data decoded according to said second encoding scheme; and

wherein said first encoding scheme introduces more redundancy than said second encoding scheme.

19. The method of claim 18 wherein said first encoding scheme and said second encoding scheme comprise convolutional encoding schemes and said first encoding scheme has a lower rate than said second encoding scheme.

20. The method of claim 18 wherein said first encoding scheme and said second encoding scheme comprise trellis encoding schemes and said first encoding scheme has a lower rate than said second encoding scheme.

21. The method of claim 18 wherein said first encoding scheme and said second encoding scheme comprise block encoding schemes.

22. The method of claim 18 wherein said block encoding schemes comprise Reed-Solomon encoding schemes.

23. In a digital communication system employing a transmission medium shared among multiple users, apparatus for transmitting comprising:

first means for encoding data related to coordinating access to said transmission medium according to a first encoding scheme;

second means for encoding data not related to coordinating access to said transmission medium according to a second encoding scheme; and

means for transmitting responsive to output by either said first encoding means or said second encoding means; and

wherein said first encoding scheme introduces more redundancy than said second encoding scheme.

24. In a digital communication system employing a common transmission medium, apparatus for controlling transmission, said apparatus comprising:

means for transforming data into a modulation signal, said data comprising data relating to controlling access to said common transmission medium and data not relating to controlling access to said common transmission medium; and

means for converting said modulation signal to an RF signal for transmission; and

wherein said transforming means applies greater protection against channel impairments to said data relating to controlling access to said common transmission medium.

25. In a digital communication system employing a transmission system employed by multiple users, apparatus for receiving, said apparatus comprising:

means for decoding data related to coordinating access to said transmission medium according to a first encoding scheme;

means for decoding data related to coordinating access according to a second encoding scheme; and

means for selecting for reception between data decoded according to said first encoding scheme and data decoded according to said second encoding scheme; and

wherein said first encoding scheme introduces more redundancy than said second encoding scheme.--